

Naval Arctic Research Laboratory Utqiaġvik (Barrow), Alaska

Airstrip Site (Site 5)

Imikpuk Lake Drinking Water Investigation

September 2017

The Navy has developed a proactive policy to assess past releases of per- and polyfluoroalkyl substances, commonly known as PFAS, specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). These substances may be present in the soil, groundwater, and/or surface water at Navy sites as a result of historical firefighting activities using aqueous film forming foam (AFFF), such as responses to crashes, equipment testing, and training. Imikpuk Lake is near an AFFF source area at the former Naval Arctic Research Laboratory (NARL) facility where AFFF use is documented (Figure 1). Imikpuk Lake used to be the primary drinking water source for the Ukpeaġvik Iñupiat Corporation-NARL (UIC-NARL) facility. The UIC-NARL facility currently obtains drinking water from the Barrow Utilities and Electric Coop Inc (BUECI) water treatment plant, which uses the Isatkoak Reservoir as the drinking water source for the City of Utqiaġvik (Barrow). Water from Imikpuk Lake is periodically used as an alternate drinking water source by elders, hunters, and fishers in the area and, therefore, was sampled as part of the Navy's effort to assess PFAS exposure in drinking water. **Out of concern for the community, the Navy is assessing exposure to certain PFAS compounds in surface water in Imikpuk Lake that is periodically used as drinking water before investigating PFAS on Navy property.**

Historically, fuel spills occurred at the NARL Airstrip Site. In 1970, 400 gallons of aviation gasoline were spilled in the Navy hangar (Building 136). The Navy's fire department covered the fuel with foam to remove the threat of fire.

IMIKPUK LAKE SURFACE WATER SAMPLING

The Navy conducted surface water sampling at Imikpuk Lake in July 2017 near the NARL to determine whether PFAS were present at concentrations above the EPA lifetime health advisory (LHA). The results of the five surface water samples collected revealed four samples with PFOA detected above the EPA LHA (greater than

Figure 1



LEGEND

- Site Boundary (suspected source)
- Site 5 - 1-mile zone
- Navy Property Boundary

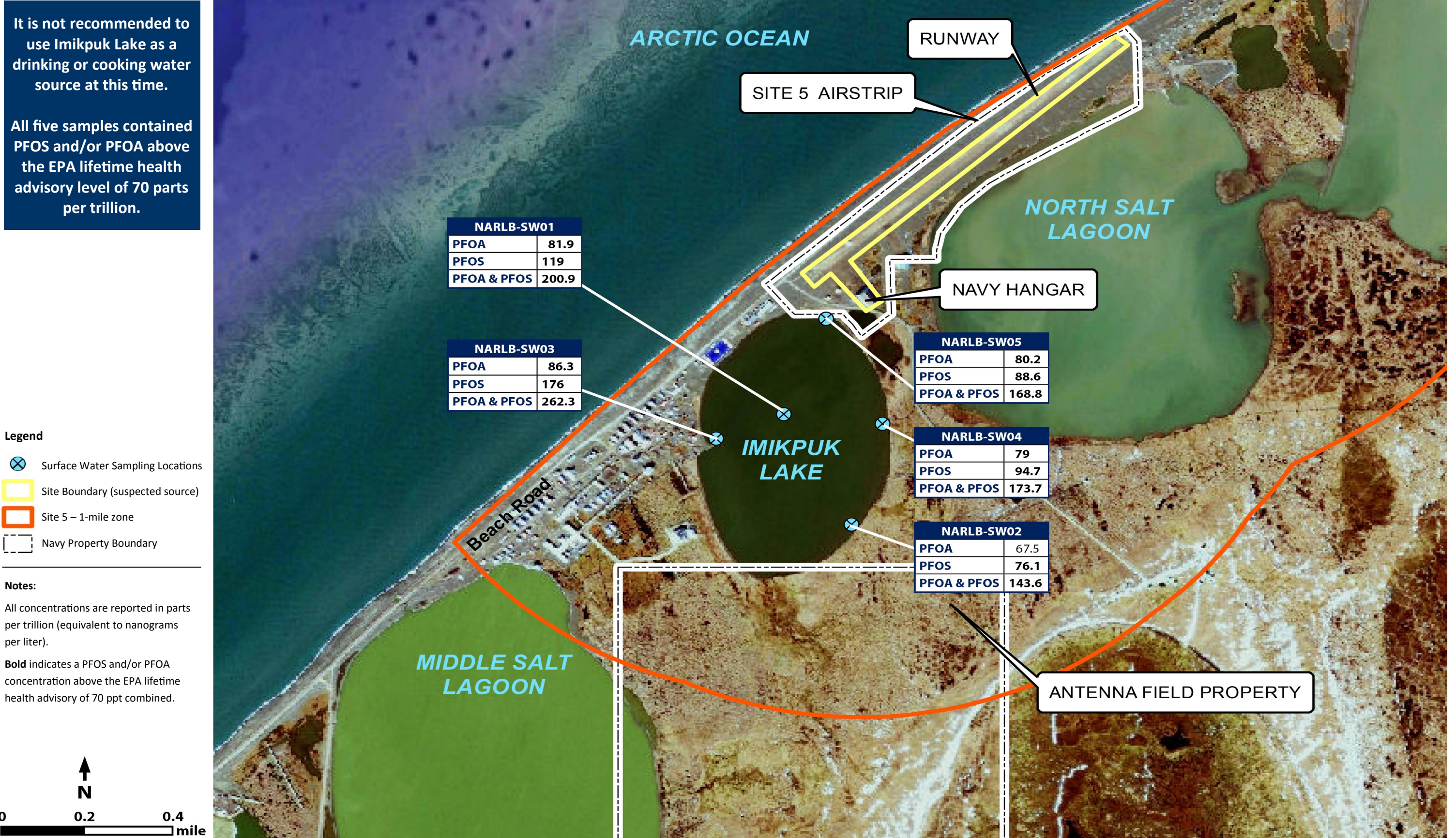
70 parts per trillion [ppt]); all five samples had PFOS and combined PFOS and PFOA detected above the EPA LHA (greater than 70 ppt) (see Figure 2).

BACKGROUND

PFAS are manufactured chemicals that have been used since the 1950s in many household and industrial products because of their stain- and water-repellant properties. PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released to the environment, they break down very slowly.

Based on these results, it is not recommended to use Imikpuk Lake as a drinking or cooking water source at this time.

Figure 2



PFAS are “emerging” contaminants, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements at this time. The EPA is currently studying PFAS to determine if regulation is needed. In May 2016, the EPA released lifetime health advisory levels for two PFAS. ***Health advisory levels are not regulatory standards. They are health-based concentrations which should offer a margin of protection for anyone throughout his or her life from adverse health effects resulting from exposure to PFOS and PFOA in drinking water.*** The EPA health advisory level for lifetime exposure is 70 ppt for PFOS and 70 ppt for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should also not exceed 70 ppt. This investigation focuses on PFOA and PFOS because these are the only PFAS with EPA lifetime health advisory levels in drinking water.

The Navy performed this sampling in coordination with partners such as Agency for Toxic Substances and Disease Registry Region 10, Alaska Department of Health and Social Services, Alaska Department of Environmental Conservation, North Slope Borough, Native Village of Barrow, and UIC.

NAVY POLICY

The Navy has developed a proactive policy to assess potentially impacted drinking water and eliminate unacceptable exposure to PFOS and/or PFOA near installations where there were known or suspected releases of PFAS to the environment. Navy policy is to sample drinking water sources 1 mile downgradient (in the direction of groundwater flow) from a known or suspected release of PFAS. Sampling in this area will allow the Navy to identify if the community has been exposed to PFOS and/or PFOA in drinking water above the EPA lifetime health advisory levels.

ACTIONS BASED ON RESULTS

The results of samples collected in July 2017 show that Imikpuk Lake water contains PFOS and PFOA above the EPA lifetime health advisory. Based on these results, it is not recommended to use Imikpuk Lake as a drinking or cooking water source at this time.

Our first priority was to determine if PFOS and/or PFOA were present in Imikpuk Lake above the EPA lifetime health advisory. The Navy will complete an investigation to determine and assess the extent of contamination, evaluate the potential for risk, and develop appropriate response actions following federal and state environmental regulations and guidance.

HEALTH INFORMATION

Exposure to PFOS and PFOA appears to be global. Studies have found both compounds in the blood samples of the general population. Studies on exposed populations indicate that PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight. In studies conducted using laboratory animals, effects on developmental, neurological, immune, thyroid, and liver function were observed. Evidence linking PFOS and/or PFOA with cancer is inconclusive.

Health effects from exposure to low levels of PFAS are not well known and studies are continuing. At this time, it is not possible to link exposures to PFOS and/or PFOA to a person’s individual health issues. Blood tests are available to measure these chemicals, but they are not routinely done because the results can be inconclusive and test results do not predict health effects. Long-term exposure effects are still being investigated by the EPA.

Based on what is known and still unknown about PFOS and PFOA, the EPA recommends that people not drink or cook with water that contains these compounds above the EPA’s lifetime health advisory levels. This investigation focuses on PFOS and PFOA because these are the only PFAS for which the EPA has established a lifetime health advisory level in drinking water.

For more information, visit

www.secnave.navy.mil/eie/pages/pfc-pfas.aspx

The Navy has established the following website to keep you updated as more information becomes available:

<https://navfac.navy.mil/PFASBARROW>

If you have specific questions, please contact the Navy Public Affairs Office by leaving a voicemail at

360-396-1030 or by sending an email to

PAO_feedback@navy.mil